

In the Claims:

Please amend the claims by replacing all prior versions of the claims pursuant to 37 C.F.R. §1.121 as modified by 68 Fed. Reg. 38611 (June 30, 2003) as follows:

1. (Currently Amended) A method of assaying whether an agent affects the beating rate ~~heart rate~~ of a cardiac cell which comprises:
 - (a) contacting a cardiac cell with an effective amount of a compound *in vitro* to cause a sustainable beating rate ~~heart rate~~;
 - (b) measuring the beating rate ~~heart rate~~ after step (a);
 - (c) contacting the cardiac cell with an agent to be assayed for its effects on the beating rate ~~heart rate~~;
 - (d) measuring the beating rate ~~heart rate~~ after step (c); and
 - (e) comparing the difference between step (b) and step (d), thereby determining whether the agent affects the beating rate ~~heart rate~~.
2. (Currently Amended) The method of claim 1, wherein the cardiac cell ~~heart~~ is mammalian.
3. (Original) The method of claim 1, wherein the cardiac cell is a cardiac myocyte.
4. (Withdrawn) The method of claim 1, wherein the compound comprises a nucleic acid which encodes MiRP1.
5. (Withdrawn) The method of claim 1, wherein the compound comprises a nucleic acid which encodes an HCN channel.
6. (Withdrawn) The method of claim 5, wherein the HCN channel

is HCN1.

7. (Withdrawn) The method of claim 5, wherein the HCN channel is HCN2.
8. (Withdrawn) The method of claim 5, wherein the HCN channel is HCN4.
9. (Previously Amended) The method of claim 1, wherein the compound comprises nucleic acids which encode MiRP1 and a HCN channel.
10. (Withdrawn) The method of claim 9, wherein the HCN channel is HCN1.
11. (Original) The method of claim 9, wherein the HCN is HCN2.
12. (Withdrawn) The method of claim 9, wherein the HCN channel is HCN4.
13. (Canceled)
14. (Canceled)
15. (Currently Amended) A method of assaying whether an agent affects the beating rate of cardiac myocytes ~~heart rate~~ which comprises:
 - (a) disaggregating *in vitro* cardiac myocytes from a heart;
 - (b) measuring the beating rate of the cardiac myocytes after step (a);
 - (c) contacting a set of the cardiac myocytes from step ~~(a)~~ (b) with an agent to be assayed for its effects on the beating rate ~~heart rate~~;
 - (d) measuring the beating rate ~~heart rate~~ after step (c); and
 - (e) comparing the measurements from step (b) and step (d), thereby determining whether the agent affects the

beating rate ~~heart rate~~.

16. (Original) The method of claim 15, wherein the measuring steps are performed with a calcium sensitive dye and a photodiode.
17. (Withdrawn) A method of assaying whether an agent affects the membrane potential of a cell which comprises:
 - (a) contacting the cell with a sufficient amount of a compound capable of lessening the negativity of the membrane potential of the cell;
 - (b) measuring the membrane potential of the cell after step (a);
 - (c) providing the cell with an agent to be assayed for its effects on the membrane potential of a cell;
 - (d) measuring the membrane potential of the cell after step (c); and
 - (e) comparing the difference between the measurements from step (b) and step (d), thereby determining whether the agent affects the membrane potential of the cell.
18. (Withdrawn) A method of assaying whether an agent affects the activation of a cell which comprises:
 - (a) contacting the cell with a sufficient amount of a compound to activate the cell;
 - (b) measuring the voltage required to activate the cell after step (a);
 - (c) providing the cell with an agent to be assayed for its effects on the activation of the cell;
 - (d) measuring the voltage required to activate the cell after step (c); and
 - (e) comparing the difference between the measurements from

- step (b) and step (d), thereby determining whether the agent affects the activation of the cell.
19. (Withdrawn) A method of assaying whether an agent affects the contraction of a cell which comprises:
- (a) contacting a cell with an effective amount of a compound to contract the cell;
 - (b) measuring the level of contraction of the cell after step (a);
 - (c) contacting the cell with an agent to be assayed for its effects on contraction of the cell;
 - (d) measuring the level of contraction of the cell after step (c); and
 - (e) comparing the difference between the measurements from step (b) and step (d), thereby determining whether the agent affects the contraction of the cell.
20. (Withdrawn) A vector which comprises a compound which encodes an ion channel gene.
21. (Withdrawn) The vector of claim 29, wherein the vector is selected from the group consisting of a virus, a plasmid and a cosmid.
22. (Withdrawn) The vector of claim 30, wherein the vector is an adenovirus.
23. (Withdrawn) The vector of claim 29, wherein the compound comprises a nucleic acid which encodes MiRP1.
24. (Withdrawn) The vector of claim 29, wherein the compound comprises a nucleic acid which encodes an HCN channel.
25. (Withdrawn) The vector of claim 33, wherein the HCN channel is HCN1.
26. (Withdrawn) The vector of claim 33, wherein the HCN channel

is HCN2.

27. (Withdrawn) The vector of claim 33, wherein the HCN channel is HCN4.
28. (Withdrawn) The vector of claim 29, wherein the compound comprises nucleic acids which encode MiRP1 and a HCN channel.
29. (Withdrawn) The vector of claim 37, wherein the HCN channel is HCN1.
30. (Withdrawn) The vector of claim 37, wherein the HCN channel is HCN 2.
31. (Withdrawn) The vector of claim 37, wherein the HCN channel is HCN4.
32. (Previously added) The method of claim 1, wherein the contacting is performed by administration of an adenovirus infection, viral-mediated infection, liposome-mediated transfer, microinjection, electroporation, or coculturing the cell with a nucleic acid encoding MiRP1 and HCN.
33. (Previously added) The method of claim 32, wherein the HCN is HCN1.
34. (Previously added) The method of claim 32, wherein the HCN is HCN2.
35. (Previously added) The method of claim 32, wherein the HCN is HCN4.